# Lack of Trust in Maternal Support is Associated with Negative Interpretations of Ambiguous Maternal Behavior

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**Abstract**

Attachment theory assumes that children who lack trust in maternal availability for support are more inclined to interpret maternal behavior in congruence with their expectation that mother will remain unavailable for support. To provide the first test of this assumption, children (9-13 years old) were asked to assess whether ambiguous interactions with mother should be interpreted in a positive or a negative way. In our sample ($n$ = 322), results showed that children's lack of trust in their mother's availability for support was related to more negative interpretations of maternal behavior. The associations remained significant after controlling for negative affect. The importance of these findings for our understanding of attachment theory, attachment stability, and clinical practice are discussed.

KEYWORDS: Attachment, Early Adolescence, Interpretation Bias, Trust

## Introduction

Attachment research increasingly supports Bowlby's (1969) central assumption that the quality of early caregiving experiences leads to the development of expectations regarding the attachment figure's availability as a source for support. These expectations, often operationalized as trust, have significant consequences for children's and adolescents' cognition and information processing (see Dykas & Cassidy, 2011 for a review). Information processing occurs automatically, outside of strategic control, at three different stages that follow a logical order (Beck, 1964). In the first stage, *Attentional processing,* the brain preferentially encodes expectation-relevant stimuli. Next, during *Memory processing,* the brain preferentially activates expectation-congruent recollections related to the encoded stimuli. Finally, these recollections guide *interpretation processing* of new experiences in congruence with established expectations (Beck, 1964).

Interpretations are thought to serve a protective function in that they motivate us either to avoid previous negative experiences or to repeat previous positive experiences (Snyder & Stukas, 1999). Consequently, interpretation processing is the final and crucial stage of information processing and essential to explain the link between expectations and behavior (Snyder & Stukas, 1999). Given the close link between interpretation and behavior, it is no surprise that Bowlby (1969) considered the child's interpretations of maternal behavior a key component of the attachment system (Thompson & Raikes, 2003). Each child has a repertoire of behavioral responses aimed at eliciting care and support from adults when distressed, such as crying or proximity seeking (Bowlby, 1969). When support is available, the adult helps alleviate the child's distress (Cassidy, 2008). This has an adaptive function in the long-term development of children. The extent to which the children and adolescents employ these attachment behaviors to elicit care and protection is dependent on their experiences with caregivers' support or lack thereof (Ainsworth, Blehar, Waters, & Wall, 1978; Cassidy, 1994). Interpretation processing of attachment information might not only play an important role in short term (moment to moment) attachment behavior, but also in the stability of attachment behavior across development. If adolescents interpret parental behavior in line with previous experience, even when the attachment figure's behavior is objectively ambiguous (Bowlby, 1969; Dykas & Cassidy, 2011), the adolescent may interpret parental behavior an in expectation consistent manner and reinforce the child's expectations regarding the attachment figure. However, in spite of the surge of research on attachment-related information processing, a recent literature review did not identify any studies focusing on whether (lack of) trust in primary attachment figures' availability as a source for support is characterized by expectation-congruent interpretations of ambiguous primary attachment figures' behavior (Dykas & Cassidy, 2011).

In an attempt to unravel attachment-related information processing, recent research has increasingly focused on late childhood and early adolescence. This is an especially interesting age period for such research questions as the original primary caregiver(s) retain their primary role (e.g., Kerns, Tomich, & Kim, 2006) while attachment increasingly moves to a more representational level (Main, Kaplan, & Cassidy, 1985). Furthermore, accumulating research has demonstrated the clinical relevance of late childhood attachment for (mal)adaptive development during adolescence (Kerns, 2008). Altogether, this resulted in studies demonstrating the existence of the first two stages of expectation-congruent processing of attachment-related information. More specifically, for the first stage of information processing, research demonstrated an automatically enhanced attentional focus on mother in early adolescents who lack trust in maternal support and availability (Bosmans, Braet, Koster, & De Raedt, 2009; Bosmans, Koster, Vandevivere, Braet, & De Raedt, 2013). In other words, early adolescents with less trust tend to more closely focus their attention on their mother, perhaps because they feel the need to check their mother's presence and have a reduced ability to explore the environment (Bosmans et al., 2009). For the second stage of information processing, results have demonstrated a memory bias in congruence with attachment expectations. Specifically, early adolescents who lack trust in caregiver support more easily recall negative memories about their caregiver (e.g. Alexander et al., 201; Dujardin, Bosmans, Braet, & Goossens, 2014; Kirsh & Cassidy, 1997; Lynch & Cicchetti, 1998; Miller & Noirot, 1999).

The impact of trust on the third and final stage of information processing, interpretation, has not yet been examined in early adolescence. There is some indirect evidence suggesting that attachment-related expectations are associated with early adolescents' interpretation of social interactions. More specifically, research on the interpretation of ambiguous peer behavior found that trust in parental availability enhanced early adolescents' ability to correctly identify peers' positive and negative intentions. In contrast, lack of trust leads to more negative interpretations of peers' intentions (Cassidy, 1988; Dykas & Cassidy, 2011; Suess, Grossmann, & Sroufe, 1992). However, the discussion is ongoing whether peer relationships can be considered equivalent to attachment relationships with primary caregivers (e.g., Kerns et al., 2006). Furthermore, research in late adolescence demonstrated that parent attachment is more important than peer attachment for adolescents' interpretations of ambiguous general social scenarios (Barrett & Holmes, 2001). Therefore, the question remains whether an attachment expectation-congruent interpretation bias in early adolescence can be found in interactions with primary caregivers. As research has demonstrated that the mother is most likely to be the primary caregiver (Main et al., 1985), the current study aims to address this research question focusing on the mother-child relationship.

In the current study, we wanted to examine early adolescents' attachment-related interpretation bias about their mother. We therefore presented early adolescents with scenarios describing situations during which mother behaved in an ambiguous manner. Next, three different interpretations of mother's behavior were given, ranging from more secure to more insecure. They were asked to rank-order these alternatives in terms of probability that they would experience mother's behavior as described. We hypothesized that early adolescents with less trust would interpret mother's ambiguous behavior as less supportive or more rejecting. Because previous research demonstrated an effect of negative mood on interpretations of social interactions (Orobio de Castro, Slot, Bosch, Koops, & Veeman, 2003), we examined whether the association between trust and the interpretation of maternal behavior remained significant after controlling for mood state.

## Method

### Participants

Our sample consisted of 322 general population early adolescents (135 boys, 187 girls) with ages ranging from 9-13 years ($M$ = 11.70; $SD$ = .68). The sample was collected from elementary school settings in Flanders, Belgium. The early adolescents were recruited after flyers were distributed to invite parents and their children to come to the laboratory. They were asked to fill in several questionnaires. The data collection happened in collaboration with third year bachelor students and second year master students.

### Procedure

The early adolescents were asked to come to the laboratory as part of a broader research study. All parents and their children volunteered and gave their informed consent to participate after being fully informed about the goals and content of the study. They were asked to fill in several questionnaires in random order. The research procedure was approved by Ghent University's Ethical Committee.

### Measures

#### Interpretations of Maternal Behavior.

*Development of the measure.* Twelve scenarios were written, describing an ambiguous interaction with mother (for an example, see Appendix A). Each interaction reflected a maternal behavioral response that could both be experienced as more or less supportive. In order to determine relevant interactions and scenarios for this age group, several pilot interviews were conducted during which early adolescents were asked to describe

situations when their mother appeared to behave unresponsive or rejecting. Through these interviews, three types of mother-child interactions were created (each operationalized in four different situations): type 1: situations requiring support which mother fails to provide, type 2: situations during which mother reacts angrily, and type 3: situations where mother interrupts warm interactions.

For each of these 12 situations, three alternative interpretations were created, reflecting positive and negative explanations of the ambiguous maternal behavior. These alternatives were selected using a bottom-up approach on two aspects. Firstly, the alternatives were derived from the spontaneous interpretations of a sample of 50 early adolescents, who were presented with the same 12 hypothetical situations and were asked the open-ended question "Why do you think your mother would respond this way?". Secondly, the valence of each alternative interpretation was determined by another sample of 50 early adolescents. These adolescents were asked to rate how distressed they would feel if the interpretation was true, using a 7 point Likert-scale ranging from 1 (absolutely not distressed) to 7 (absolutely distressed; see Appendix B). Using these scores, mean distress scores were calculated per alternative interpretation and each alternative was ranked as more or less insensitive at a group level. A pilot study demonstrated that early adolescents who more frequently chose the insecure alternatives as most probable, had less trust in maternal support ($r$ = -.37, $p$ < .01) and displayed marginally less coherence during Child Attachment Interview (Target, Fonagy, & Shmueli-Goetz, 2003; $r$ = -.32, $p$ <.09).

*Application of the measure in the current study.* To calculate an attachment interpretation score, we first dummy coded the first ranked interpretation for each situation. The early adolescents received a score of 1 for each situation in which they perceived the most insensitive interpretation at group level as the most probable. The final Interpretation Bias score (ranging from 0 – 12) was calculated by summing the scores of all situations. A higher Interpretation Bias score reflects more insecure interpretations about maternal behavior, while a lower Interpretation Bias score reflects more secure interpretations.

**Trust in maternal support.** Trust in maternal support was estimated with the Trust-subscale (Dutch version; Bosmans et al., 2009) of the People In My Life Questionnaire which is designed to measure 10 to 12-year-old early adolescents' representations of attachment figures (Ridenour, Greenberg, & Cook, 2006). Given the goal of the current study, only the items of the Trust-scale focusing on the relationship with mother were used. Trust is conceptualized as the positive affective/cognitive experiences of trust in the accessibility and responsiveness of attachment figures (10 items, e.g. "I can count on my mother to help me when I have a

problem"). They responded on a 4-point Likert-scale ranging from 1 (almost never true) to 4 (almost always true). The Trust scale was reliable in our sample ($\alpha$ = .86).

**Depressive mood.** The early adolescents completed a Dutch version of the CDI (Kovacs, 1992; Timbremont & Braet, 2002) to assess current depressive mood. The CDI is used for children and adolescents aged 7 to 17. It includes 27 items measuring cognitive, affective and behavioral symptoms of depressed mood in children and adolescents. Each item consists of three statements graded in order of increasing severity from 0 to 2 and they select the item that characterized them best during the past two weeks. The CDI was reliable in our sample ($\alpha$ = .72).

**Data Analyses**

Correlational analyses were performed in order to examine the association between Trust, CDI, and Interpretation Bias scores. Furthermore, a partial-correlation between Trust and Interpretation Bias was calculated while controlling for CDI scores.

## Results

Table 1 presents the descriptive information of all measured variables. First, it must be noted that Interpretation Bias scores are rather low. This might have been the result of self-selection, with mostly securely attached and emotionally well-functioning early adolescents participating in our study. Next, we conducted a series of correlational analyses examining the associations between Trust, CDI, and Interpretation Bias scores. Our results show a positive correlation ($r$ = .16, $p$ < .01) between Interpretation Bias and CDI. In other words, a more negative Interpretation Bias was associated with increased Depressive Mood. Furthermore, a negative correlation ($r$ = -.37, $p$ < .001) was found between Trust and CDI, indicating that more Trust in maternal support was associated with less Depressive Mood. Finally, as predicted, Trust was negatively associated with Interpretation Bias scores ($r$ = -.29, $p$ < .001). Given the strong association between Trust and the CDI, we examined the association between Trust and Interpretation Bias, controlling for CDI scores. The results indicated that Trust scores were still a significant predictor of early adolescents' Interpretation Bias scores even after controlling for their Depressive Mood ($r$ = -.24, $p$ < .001).

## Discussion

The current study aimed to investigate whether early adolescents' interpretations of interactions with an attachment figure were influenced by their trust or lack of trust in the attachment figure's availability. For this

purpose, early adolescents were asked to interpret ambiguous maternal behavior. In order to examine whether this interpretation bias is congruent with attachment expectations, the association with early adolescents' trust in maternal support was examined in a large sample. Because mood dependent response biases have been shown to influence interpretations, this association was controlled for depressive mood.

Our results demonstrate a negative association between trust and insecure interpretations of maternal behavior. In other words, early adolescents who trust less in maternal support also have more insecure interpretations about maternal behavior. This finding is in line with Bowlby's (1969) assumption that children's (lack of) trust in the attachment figure's availability as a source for support is characterized by an enhanced processing of information that is congruent with the expectation that the attachment figure will (not) be available. Moreover, these results are in line with previous research on peer attachment demonstrating that insecure attachment is associated with more negative interpretations of peer behavior (Cassidy, 1988; Dykas & Cassidy, 2011; Suess et al., 1992). Importantly, the current study broadens these findings by demonstrating the presence of a similar process in mother-child attachment.

This study is a first small yet important step towards a better understanding of attachment-related interpretation bias of primary caregivers' behavior in early adolescence. However, several limitations are important to mention. First of all, trust in maternal support was assessed using a self-report measure. Attachment researchers have often argued that self-report instruments are less adequate to measure attachment because of the assumption that attachment-relevant thoughts and feelings operate outside of conscious awareness (Ainsworth et al., 1985; Bowlby, 1980). Therefore, future research should include more narrative measures of attachment, such as the Secure Base Script Task (Waters & Waters, 2006) or the Child Attachment Interview (Target et al., 2003). In this regard, it is promising that early adolescents with more insecure interpretations were marginally less coherent during the Child Attachment Interview in the pilot study. Nevertheless, it must be noted that attachment researchers in recent years have argued that measures in early adolescence might not have to be evaluated in terms of which measure is superior to other measures, but rather in terms of which measure captures which component of the broader attachment construct (Bosmans & Kerns, 2015; Steele, 2015). For this reason one can argue that the current study at least shows that early adolescents' explicit appraisals of whether or not they can trust in their mother's availability is linked to the way they interpret her behavior. Secondly, further validation of this novel measure for attachment-related interpretation bias is required. Future research should examine the relationship between attachment-related interpretation bias and known correlates of attachment, such as parenting behavior and childhood psychopathology. In this regard, the positive correlation between

depressive mood and attachment-related interpretation bias is a hopeful result. Lastly, this study had a cross-sectional design. This does not allow us to determine the causal relationship between trust in maternal support and attachment-related interpretation bias. Recent research suggests that information processing biases might causally influence expectations (MacLeod, Koster, & Fox, 2009). Future research could attempt to manipulate the interpretation bias and measure subsequent changes in expectations of trust in order to investigate their causal relationship.

The presence of an attachment expectation-congruent interpretation bias might be an important factor in attachment stability. Attachment figure behavior is interpreted in line with previous experiences and associated expectations, regardless of the attachment figure's objective intentions. Therefore, early adolescents who don't trust their attachment figure will interpret their ambiguous behavior as unsupportive, which is likely to feed back onto lack of trust and help maintain attachment insecurity. This finding might urge an important consideration during attachment-focused therapy. It has been suggested that information processing biases might act as a barrier during the therapeutic process (Baert, Koster, & De Raedt, 2011) for expectation-incongruent information at the expense of information that could change the content of cognitive schemas. In other words, children and adolescents continue to interpret parental behavior as negative during family therapy, even though the therapy might have elicited positive parental changes. As interpretations strongly influence behavior (Snyder & Stukas, 1999), the presence of an insecure interpretation bias might hamper children's and adolescents' progress during therapy. Interestingly, interpretation bias has been described as the most strategic stage of information processing (Beck, 1964), allowing it to be targeted by clinical techniques. Our findings suggest that clinical practitioners should consider the importance of interpretation bias when planning the different stages of therapy.

To summarize, our findings propose the presence of an attachment expectation-congruent interpretation bias in early adolescence. Early adolescents who lacked trust in maternal support also reported more insecure interpretations of ambiguous maternal behavior. This association remained significant after controlling for depressive mood. These findings further confirm Bowlby's (1969) assumption that children's attachment expectations, based on previous experiences, should be reflected in their automatic processing of social information.

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## Appendix A

(angry example)

You are playing with your brother/sister/friend in your room and suddenly (s)he starts to cry. Your mom hears this, gets angry, and goes to your room. Why?

__ mom thinks I hurt him/her and is angry with me

__mom was doing something important and is annoyed that she has to come to my room

__mom is worried about what happened

(support seeking example)

You are playing outside and have hurt yourself badly. You are crying hard and call your mom to help, but she does not come. Why?

__mom is working and cannot come to help me

__mom did not hear me

__mom doesn't think it's important enough to help me.

## Appendix B

How do these ideas make you feel?

How distressed would it make you feel if the idea would be really true? Rate for each idea belonging to each situation to what extent this would make you feel distressed. You can encircle one of the numbers between 1 and 7. The more you would feel distressed the higher the number you can encircle.

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*You are playing with your brother/sister/friend in your room and suddenly (s)he starts to cry. Your mom hears this, gets angry, and comes to your room. Why?*

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mom thinks I hurt him/her and is angry with me | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| Mom was doing something important and is annoyed that she has to come to my room | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| Mom is worried about what happened. | **1** | **2** | **3** | **4** | **5** | **6** | **7** |

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**Table 1. Descriptive statistics.**

| | *M* | *SD* | Minimum | Maximum |
|---|---|---|---|---|
| IB | 1.52 | 1.13 | 0 | 6 |
| Trust | 36.15 | 4.14 | 14 | 40 |
| CDI | 6.85 | 4.00 | 0 | 26 |

***** IB = Interpretation Bias